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STATISTICAL BULLETIN
METROPOLITAN LIFE INSURANCE COMPANY
VOLUME 19 MAY . 1938 NUMBER 5

Men the Chief Victims of Fatal Home Accidents

THE men of the house are quite as much in need of education in the art of safe living at home as are the women. While it is true that men are less likely to suffer minor injuries in home accidents, their chances of being killed are much greater than are those of women. In a recent study of mortality among Industrial policyholders of the Metropolitan Life Insurance Company it was found that fatal accidents in the home were 1½ times as frequent among males as among females in the broad age range 15 to 64 years. This excess among males is the more remarkable when it is considered that, at this time of life, men spend a large part of their active hours away from home, in industry, while women's chief occupation is the care of the home.

Some reasons for the higher incidence of home fatalities among males are suggested by a comparison of the death rates for specific types of home accidents among male and female policyholders, as portrayed in the table on page 2.

In the age group 15 to 64, to which we shall confine our discussion, falls caused slightly less than half the deaths for each sex and were about one third more frequent among men. A review of the circumstances surrounding these accidents as reported on the death records shows that falls off roofs, ladders, porches, and balconies were much more frequent among men, a fact which suggests that many had attempted repair jobs for which they were not qualified or for which they did not have the proper tools. Falls down stairs, by far the most important type of fall, were also more frequent among men than among women.

Deaths from poisonous gas were three times as frequent among men. Illuminating gas was the lethal agency involved in three fifths of the deaths, and automobile carbon monoxide gas in one fourth of the deaths among males.

The escape of illuminating gas is due to a variety of causes; to flexible pipe becoming detached from heaters, to inadvertent turning of gas jets, to defective tubing, leaking gas fixtures, or to the extinction of gas flames by overboiling water or by a gust of wind. Deaths by carbon

monoxide poisoning occur when automobile motors are run in home garages with doors and windows closed. A surprisingly large number of deaths by gas poisoning occur from the careless manipulation of appliances by men who are under the influence of liquor. There are many deaths included here also which would undoubtedly be classified as suicidal if we were in possession of all the facts.

Firearms were the third most important cause of male mortality, but of little importance among women. Deaths due to cleaning guns or careless handling of loaded guns caused 1.2 deaths per 100,000 male policyholders but only 0.2 per 100,000 females.

By way of contrast, it is interesting to observe that accidental burns, exclusive of those sustained in conflagrations, were the only type of home accident in which more women than men were injured fatally. Fatal burns in the home occur about twice as frequently among women as among men. Nevertheless, the male mortality rate of 1.1 deaths per 100,000 was not inconsiderable.

The facts presented here indicate that there is a very definite need for an intensive study of the unsafe practices of men at home in their off hours. It is felt that this phase of the home accident prevention problem has not hitherto been given the consideration which its importance manifestly deserves.

Death Rates per 100,000 from Fatal Accidents in the Home By Sex and Age Periods. Metropolitan Life Insurance Company Weekly Premium-Paying Business, Industrial Department 1931 to 1935 Combined

Means of Injury*	Death Rates per 100,000									
	All Ages		0 to 4		5 to 14		15 to 64		65 and Over	
	Males	Females	Males	Females	Males	Females	Males	Females	Males	Females
All Fatal Accidents in the Home	14.9	13.7	30.1	25.4	4.5	4.2	13.8	9.3	87.3	118.3
Poisoning by food	.2	.1	.4	.4	†	.1	.1	.1	.6	.2
Other acute accidental poisonings	.7	.6	3.1	1.9	.1	.1	.5	.5	1.0	.6
Conflagration	.9	.6	1.4	1.3	.6	.5	.9	.5	3.2	2.4
Accidental burns	2.2	3.3	10.5	11.8	.9	2.4	1.1	2.0	7.8	11.9
Accidental absorption of poisonous gas	1.8	.8	.4	.5	.1	.1	2.5	.8	8.6	3.9
Accidental drowning	.2	.1	1.2	.5	†	†	.1	†	.1	.2
Traumatism by firearms	1.0	.2	.4	.2	1.0	.2	1.2	.2	.3	.2
Traumatism by cutting or piercing instruments	.1	.1	.1	.2	†	†	.1	.1	.7	.2
Traumatism by fall	6.0	7.1	4.4	3.3	1.1	.6	6.2	4.5	61.6	95.7
Other accidental fatalities	1.8	.9	8.1	5.3	.6	.2	1.0	.5	3.4	2.9

*Titles of the International List, 1920 Revision. †Less than 0.05 per 100,000.

The Increase of Smallpox in the United States

THE year 1937 witnessed another rise in smallpox incidence throughout the greater part of the United States. Reports received during the year totaled 11,806 cases, as against 7,844 in 1936. Four years ago it seemed that the disease was at last coming under control and that it was only a question of time when smallpox would be finally eliminated as a major health problem in this country. Since then, however, there has been a resurgence of the disease that is most disheartening.

It is strange that a country which boasts of its conquests over typhoid fever, diphtheria, and infantile diarrhea, and which has made such remarkable strides against tuberculosis and other respiratory infections, should find it so difficult to control what is probably the most easily preventable disease known to medical science. By the simple process of universal vaccination, smallpox can be utterly eradicated from any community at a nominal cost per person. It requires no vast expenditures for water purification plants and complicated sewer systems as in the case of typhoid fever, nor costly edifices and highly organized personnel as are needed for the control of tuberculosis. Yet year after year we continue to tolerate this loathsome disease.

Fortunately, the form of smallpox now prevailing in the United States is mostly of the mild, nonvirulent type which causes relatively few deaths. Nevertheless, one never can tell when the continued disregard of this mild type of smallpox may lead to developments involving the more deadly form of the disease.

The experience of a large Western city during the years 1921–22 is a warning of what may occur in any community which neglects to take precautionary measures in the early stages of a smallpox epidemic. During the first 10 months of this particular epidemic there were 794 cases reported without a single death. Accordingly, little concern was manifested by the population and no real effort was made to control the epidemic. However, in November 1921, matters suddenly took a turn for the worse when 11 deaths occurred among the 46 cases reported in that month. Thereafter the situation gradually grew more serious as the cases and deaths continued to mount, culminating in 252 cases and 92 deaths during November of the following year. The authorities then became sufficiently alarmed to order general vaccination against further spread of the disease. Immediately, there was a sharp drop in the number of cases and the epidemic subsided so rapidly that less than 50 cases were reported during the entire year which followed. It is safe to say that all of the 284 lives lost in this epidemic could have been saved if vaccination had been instituted promptly at the first appearance of the disease.

A peculiar feature of the smallpox situation in the United States is

that the disease is confined very largely to some of the least populous States. Considering its highly contagious character, one would expect to find the disease most prevalent in the congested areas of the East. Nevertheless, during the five-year period 1933–1937 there were only 256 smallpox cases reported in the area covered by the eight States of Massachusetts, Rhode Island, Connecticut, New York, New Jersey, Pennsylvania, Delaware, and Maryland, including the District of Columbia. On the other hand, in the eight States situated in the opposite corner of the United States, namely, Washington, Oregon, Idaho, Montana, Wyoming, North and South Dakota, and Nebraska, there were 14,203 cases of smallpox reported during this same period. That is to say, in the States bordering the North Atlantic the average case rate was only one per 1,000,000, although the population density averaged 290 persons per square mile; in the eight Northwestern States mentioned just above on the contrary, the corresponding case rate was 428 per 1,000,000 population, despite the fact that only nine

Smallpox Cases, Deaths and Case-Fatality Rates for 48 States, District of Columbia, and Nine Canadian Provinces, Years 1935–1937

Area	1937			1936			1935		
	Cases	Deaths	Deaths per 100 Cases	Cases	Deaths	Deaths per 100 Cases	Cases	Deaths	Deaths per 100 Cases
United States and Canada..	11,867	31	.26	7,906	33	.42	8,001	28	.35
United States (48 States and District of Columbia)....	11,806	29	.25	7,844	31	.40	7,963	24	.30
Canada (9 Provinces).....	61	2	3.28	62	2	3.23	38	4	10.53

Smallpox Cases, Deaths and Case-Fatality Rates for 750 United States Cities and 90 Canadian Cities, Years 1935–1937

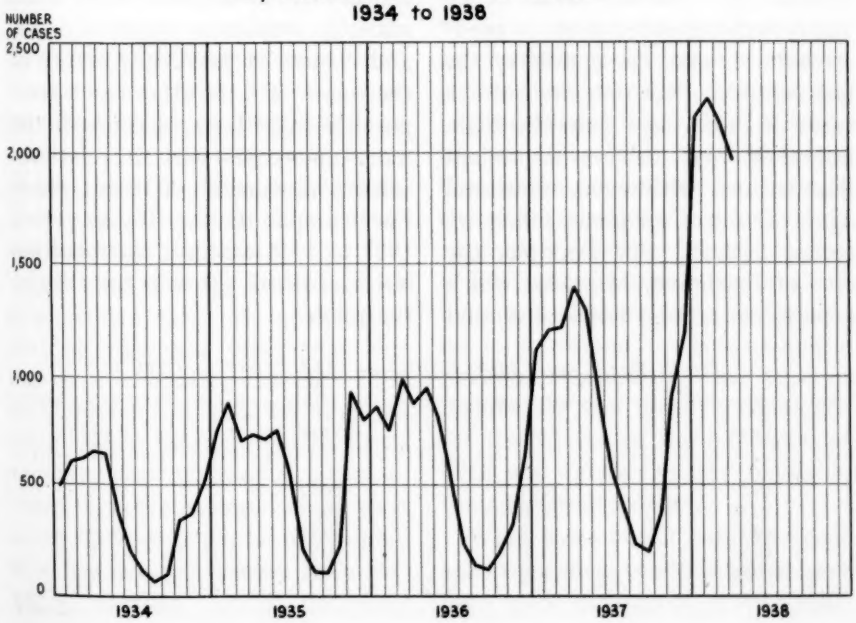
Area	1937			1936			1935		
	Cases	Deaths	Deaths per 100 Cases	Cases	Deaths	Deaths per 100 Cases	Cases	Deaths	Deaths per 100 Cases
United States and Canadian Cities (840).....	2,553	5	.20	1,924	7	.36	1,234	5	.41
United States Cities (750)..	2,549	5	.20	1,886	5	.27	1,224	4	.33
Canadian Cities (90).....	4	0	0	38	2	5.26	10	1	10.00

inhabitants per square mile resided in that part of the United States.

The high prevalence of smallpox in the Northwestern States cannot be attributed to conditions involving either the climate or the general topography. It is well known that smallpox thrives in every climate and in all parts of the Globe. It is rampant in such widely separated areas as India, parts of Africa, and Mexico. Its presence depends entirely upon how widely the efficacy of vaccination is recognized and the extent to which this preventive measure is adopted.

The Atlantic Coast States were not always as free from the disease as they are today. In 1872 and 1873 the City of Boston recorded 1,040 deaths from smallpox. Two years later there were upwards of 1,900 smallpox deaths in what is now the city of Greater New York. The total number of cases in each of these epidemics is not known, but a very conservative estimate would be about five times the number of deaths. During the period 1898–1904 there were 5,090 smallpox cases and 894 deaths reported in Philadelphia which corresponds to a case-fatality rate of 17.6 percent.

Fortunately, these communities have learned a lasting lesson from their harrowing experiences in these epidemics and no longer flout the efficacy of vaccination. Boston has experienced only one case of the disease and no deaths since 1929.



The City of New York has been entirely free of smallpox since 1932, and no one has died of the disease in that City since 1926. Philadelphia has reported only two cases of smallpox during the last 10 years, and not a single death since 1925.

How long will it be before our Western communities become equally cognizant of the perils of smallpox? Apparently, it will require nothing short of a widespread, devastating return of the virulent type of smallpox to teach them the folly of tolerating even for the moment so dangerous a disease.

How Stable Is Our Death Rate?

WE HAVE become so accustomed to decreasing mortality, reflected in increasing average length of life, that we are perhaps in danger of accepting the fact a little too readily as a matter of course and forgetting some of its implications. How secure are we actually in this gratifying state of affairs? How stable is this low mortality? What guarantees have we for the future?

First, as to stability: In this respect we certainly seem to be vastly better situated than our predecessors of, say, the middle of the last century. Not only were death rates in those days generally high, but they were subject to violent fluctuations, with every now and again a severe epidemic piling up record figures. For example, the city of Baltimore, Md.—for which a particularly long series of annual data are available—reported over the calendar period 1812 to 1890 death rates varying from a minimum of 16.9 per 1,000 (in 1840) to a maximum of 39.3 per 1,000 (in 1819); and even from one year to the next we see such violent jumps as 30.6 in 1823 to 20.1 in 1824. Further details of this long series of annual death rates are exhibited graphically in the chart on page 8. The havoc wrought during the 19th century by epidemics of yellow fever, malaria, smallpox, typhoid fever, and cholera is drastically shown in the curve. On the other hand, compare the jagged, zigzag course in the more remote past with the relatively smooth movement of recent years. For example, for the 10-year period 1927 to 1936 we have the following series of death rates in the City of Baltimore:

Death Rates per 1,000, Baltimore, Md., 1927 to 1936

YEAR	RATE	YEAR	RATE
1927	14 7	1932	13.2
1928	15.0	1933	13.2
1929	14.5	1934	13.6
1930	13.9	1935	13.5
1931	14.2	1936	13.9

In this series the highest figure is 15.0 for 1928, and the lowest, 13.2 for 1932 and 1933, a total range of 1.8 per 1,000.

The fact, of course, is that most of our greatest and surest gains in the battle against disease have been just in the field of communicable diseases, those that commonly run an epidemic and often a cyclical course—the bubonic plague, cholera, smallpox, yellow fever, malaria, typhoid fever, typhus, and diphtheria. Modern methods of sanitary and medical science have given us such effective control against these that any large-scale epidemic today would be chargeable almost to criminal negligence on the part of those in authority. Except perhaps under the stress of some overwhelming natural or political catastrophe, we may feel reasonably secure against the recurrence of epidemics of any of these diseases on any scale at all comparable with 19th century events. Furthermore, a high degree of control, though less absolute, has been achieved with regard to scarlet fever, measles, whooping cough, rheumatic fever, and a number of relatively less important diseases.

It is true that the advantage we have gained must be credited in part to influences other than our own skill in fighting disease. It is an observed fact that one and the same disease has at different times exhibited very material variations in character. For example, every physician knows that scarlet fever today is a less serious disease than formerly, whether through decreased virulence of the causative agent, or through acquired immunity, or both. Then again, modern standards of living are vastly improved, and, much as we hear of under-nutrition, there is no doubt that the people as a whole today are far better nourished than they were 50 or 100 years ago.

These factors of themselves would go a long way to add to the resistance of the population against any attack by epidemic disease, and the apparently decreased virulence and increased immunity may well be related to these improved standards of living.

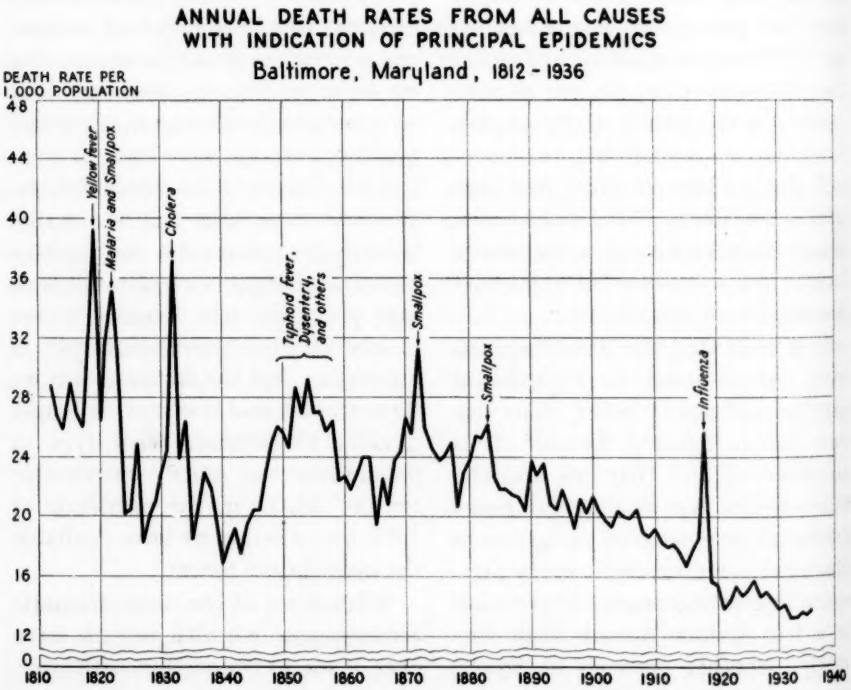
However this may be, to all appearances we are enjoying a security undreamed of by our grandfathers. And yet the memory of the influenza pandemic of 1918–1919 rudely awakens us to the fact that at least one serious risk is still with us. For we have as yet no assurance that we should be today in a much better position than we were then to combat the disease in its virulent form. We may hope that the new serum therapy for pneumonia and perhaps chemical therapy with sulfanilamide may prove effective defenses in case of any renewed serious outbreak of influenza. But the facts are that we do not know and it is now no longer possible to ascertain what type of pneumonia was chiefly responsible for the deaths in the pandemic of 1918, and whether we have available the appropriate serum.

While some of the most dramatic achievements in health progress have been made in connection with com-

municable diseases occurring frequently in epidemic form, progress, of course, has not been exclusively in this direction. The outstanding example of great improvements in mortality not related to epidemic disease is the case of tuberculosis. Here we have every reason to hope that the excellent progress made in the past will be continued, even though our measures against this disease have not as yet the precision and directness of our attack against diphtheria, for instance. The great gains in the fight against tuberculosis have evidently been attributable to our open-eyed policy of searching out and isolating active cases and thus restricting, as far as possible, the spread of the disease. We feel very confident that we can consolidate our victories in this field, and on this score we look to the future without fear.

In the matter of epidemic diseases, on the other hand, we still have to reckon with the possibility of repetitions of our last catastrophic experience with influenza or possibly with some other disease. There is, however, certainly no need of any chronic alarmist attitude on this subject. In another direction our prospects are less optimistic. Our population has, for many years past, been aging, in the sense that the proportion of young people has diminished and the proportion of old people has increased.

This process has been going on



for many decades, and we know beyond any question that it will continue for several decades to come and that the preponderance of old people will become accentuated. A death rate of 10 or 11, such as we have been enjoying recently, is not permanently possible. This is at once seen from the fact that in a stationary population a constant death rate of 10 could be attained only under the regime of a life table giving an expectation of life at birth of 100 years.

To expect any such achievement as this within the lifetime of the present generation would be optimistic beyond reason. If we assume that an expectation of life at birth of 70 years is attainable within the next two or three decades, the best we can hope for in the way of a permanent death rate is about 14 per 1,000. It is inevitable that in the near future we shall see our crude death rate creep up and gradually approach some such figure as that. This does not mean that we are confronted with a return to the highest mortality rate prevailing in the past. The death rates at each age of life, in making this estimate, are considered as constant, or even somewhat improved.

The effect of the change in the age distribution of the population will bring about higher crude death rates despite improved mortality. We should be prepared for this so that instead of being shocked by the figures when they come, we may face them with understanding and with such measures as may be best adapted to the occasion. It must be admitted that it will not be cheerful to see our death rate climbing, but if this should lead to even more concentrated efforts to improve the health of our people it will not be wholly without compensation.

Health Record for April 1938

REPORTS from every available source solidly confirm the conclusion that this country is experiencing an era of low mortality unprecedented in all its history. Coming in a period of prolonged economic stress and strain, this continuing record is a most remarkable and indeed astonishing observation; but the evidence is indisputable. First, as to the country at large*: During the five years 1932 to 1936 the average death rate was five percent lower than during the five years immediately preceding, and provisional data for 1937 indicate that there was last year a further considerable drop from 1936.

Second, and even more convincing, is the mortality record of the Industrial policyholders of the Metropolitan Life Insurance Company, who now number more than 17,500,000. This cross-section of the population, more than any other, would be expected to bear the brunt and show the evil effects of unemployment upon public health. In-

*The Registration Area for Deaths.

stead, during the current decade the death rate of this group of persons has been much lower than ever before; it has been showing practically continuous improvement with each passing year, and, unless some unforeseen widespread and fatal outbreak of a communicable disease should intervene, we may expect the current year to establish once more a new low record death rate when the books are closed.

To show how remarkable has been the recent mortality record of these millions of insured wage-earners and their dependents, we may consider the period May 1937 to April 1938 as a fiscal health year. Then we have the following picture:

Every individual month, except last October, registered a lower death rate than had before been recorded for the same month of any previous year; for October the rate just equalled that of the previous low. For the four elapsed months of 1938 the cumulative death rate was 9.6 percent lower than the previous minimum, as recorded in 1935, for this period of the year; it was nearly 13 percent below that for the corresponding part of 1937. The death rate for April 1938 was 8.1 per 1,000. This is 11 percent below the average death rate for April in this insured group during the current decade; the nearest approach to this, for the month of April in any one year, was 8.7 per 1,000 in 1933.

This extraordinary mortality picture (in particular that for the first four months of 1938) would be almost unbelievable were it not supported by evidence from other sources. New York State, for example, has reported the lowest death rate on record for the first three months of any year. Preliminary figures from 12 other States show such decided declines in mortality as to suggest that extremely low death rates for the winter season have been established in 1938 in practically every section of the country. Furthermore, the *Weekly Health Index*, published by the Bureau of the Census, shows that during the first 18 weeks of 1938 there were, in round numbers, 20,000 fewer deaths in 87 large cities than in that period of last year; and in the City of New York the cumulative death rate for the first 19 weeks of 1938 was lower than ever previously recorded for the corresponding part of any year.

Among the insured every important cause of death, with the single exception of diseases of the coronary arteries, is running a lower death rate this year than last. The improvement has been considerable, except in the case of cancer where it is slight. The year-to-date death rate for tuberculosis was only 48.6 per 100,000, or more than 14 percent below the corresponding figure last year. The death rate for puerperal diseases, which has been falling continuously for years, gives evidence that there will be a further and a larger drop again this year. Accidents—all forms—have recorded a 9-percent decline, and automobile fatalities a drop of 13 percent as compared with the January to April cumulative death rates a year ago.

The following table shows the mortality among Industrial policyholders for April 1938, March 1938, and April 1937, together with the death rates for the first four months of each year.

METROPOLITAN LIFE INSURANCE COMPANY

Death Rate per 100,000 for Principal Causes. Weekly Premium-Paying Business in Industrial Department. All Ages (Annual Basis).*

MONTHS OF APRIL 1938, MARCH 1938, AND APRIL 1937

CAUSES OF DEATH	ANNUAL RATE PER 100,000 LIVES EXPOSED*				
	April 1938	March 1938	April 1937	Cumulative January-April 1938	Cumulative January-April 1937
TOTAL—ALL CAUSES	813.5	835.2	915.5	841.8	963.1
Typhoid fever	.7	.9	.7	.8	.6
Measles	4.1	3.9	1.5	3.2	1.1
Scarlet fever	2.6	1.9	2.5	2.1	2.5
Whooping cough	3.3	1.7	2.1	2.1	2.9
Diphtheria	1.3	1.3	1.4	2.0	2.0
Influenza	8.0	10.6	25.7	12.1	41.4
Tuberculosis (all forms)	51.4	49.2	56.7	48.6	56.8
Tuberculosis of respiratory system	45.8	44.1	51.0	44.0	51.5
Syphilis, locomotor ataxia, and general paralysis of the insane	11.9	11.6	11.3	11.9	11.6
Cancer (all forms)	92.8	93.3	95.8	94.4	95.9
Diabetes mellitus	25.0	26.5	26.6	26.4	29.3
Cerebral hemorrhage; apoplexy	60.1	62.2	61.5	63.1	65.5
Diseases of the heart†	159.4	169.3	178.3	167.0	183.5
Diseases of the coronary arteries	34.8	33.8	28.3	35.0	32.4
Angina pectoris	6.4	7.3	7.7	7.6	9.1
Pneumonia (all forms)	68.9	74.5	92.9	76.2	114.6
Diarrhea and enteritis	5.5	4.8	6.2	5.6	5.5
Appendicitis	9.9	11.0	11.1	10.2	11.0
Chronic nephritis (Bright's disease)	52.7	55.4	58.9	56.9	61.4
Puerperal state—total	6.4	6.0	7.2	6.3	7.1
Suicides	8.6	9.9	8.7	8.6	8.7
Homicides	4.2	4.6	5.2	4.6	5.0
Accidents—total	42.8	42.7	46.9	45.7	50.3
Automobile accidents	13.9	15.7	17.0	16.9	19.5
All other diseases and conditions	152.8	152.9	178.2	151.5	165.1

*The rates for 1937 and 1938 are subject to slight correction, since they are based on provisional estimates of lives exposed to risk.

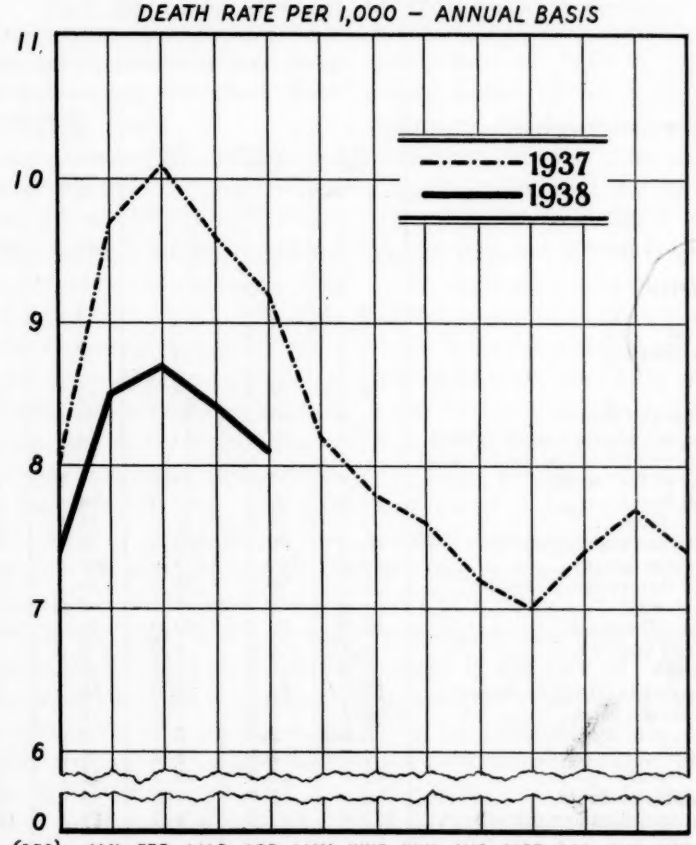
†Excludes pericarditis, acute endocarditis, acute myocarditis, coronary artery diseases, and angina pectoris.

Correspondence on the subjects discussed in these BULLETINS may be addressed to: The Editor,

STATISTICAL BULLETIN,
Metropolitan Life Insurance Company,
1 Madison Avenue, New York, N. Y.

DEATH RATES FROM ALL CAUSES

METROPOLITAN LIFE INSURANCE COMPANY
INDUSTRIAL DEPARTMENT
WEEKLY PREMIUM-PAYING BUSINESS – TOTAL PERSONS



Rates are provisional

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